



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,193	09/21/2001	Hiroyuki Atarashi	214072US2PCT	4538
22850	7590	06/06/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.			WONG, WARNER	
1940 DUKE STREET			ART UNIT	
ALEXANDRIA, VA 22314			PAPER NUMBER	
			2616	

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

8

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/926,193		ATARASHI ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Warner Wong		2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-11, 15 and 17 is/are rejected.
- 7) ☒ Claim(s) 4-6, 12-14, 16 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. The following claims are objected to because of the following informalities:
  - a) claims 9-18: the limitations of “common control channel signal insertion **means**” and “common pilot signal insertion **means**” should be corrected as “common control channel signal insert **unit**” and “common pilot signal insertion **unit**” respectively as defined in parent claim 8.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless.–

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1-3, 7-11, 15 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Baum (US 5,867,478).

**Regarding claims 1 and 8**, Baum describes a channel structuring method/base station wherein transmission signals are modulated by orthogonal frequency division multiplexing (OFDM) comprising n sub-carriers and multiplexed by time division multiplexing to configure downlink channels (col. 3, line 30-35, where OFDM

Art Unit: 2616

transmission using time and frequency dimensions are used by base unit/station (downlink) to the mobile unit/station), said method/base station comprising:

a step/common channel signal insertion unit for selecting from the  $n$  sub-carriers, a predetermined number of sub-carriers for insertion of common control channel signals and common pilot signals; and a step/pilot signal insertion unit for inserting a common control channel signal and a common pilot signal into the selected sub-carriers (fig. 4-6 & col. 9, lines 37-67 & col. 10, lines 1-49, where in each exemplary embodiment, predetermined sub-carriers are used (selected to) transmit (insert) broadcast synchronization signals (common control channel signals) using selected (common) pilot code (channel) signals, performed by the base unit/station's modulator (pilot signal insertion unit) and synchronizing unit (common channel signal insertion unit), as described in col. 14, lines 4-16);

**Regarding claim 2,** Baum further describes:

a step of providing time frames by segmenting a communication channel of said  $n$  subcarriers at every predetermined interval (fig. 4-6 & col. 9, lines 61-66, where the subcarrier frequency bands is time-divided into a baud durations (predetermined intervals));

a step of selecting a predetermined number of subcarriers from said  $n$  subcarriers, and periodically inserting the common control channel signal and the common pilot signal into every time frame of said selected subcarriers (fig. 4 & 6, where selected (predetermined number of) subcarriers from the total number of

subcarriers are assigned to periodically insert broadcast synchronization (common control channel) using selected (common) pilot code (channel) signals).

**Regarding claim 3**, Baum further describes that the common control channel signal and the common pilot signal are periodically inserted into every time frame of said selected subcarriers, either the common control channel signal or the common pilot signal, or both thereof, is/are inserted at the same timing as either the common control channel signal or the common pilot signal, or both thereof of other subcarriers (fig. 4 & 6, where the broadcast synchronization (common control channel signal) using (and) the selected (common) pilot code (channel) signal are periodically inserted at the same timeslot within the baud interval for every subcarrier).

**Regarding claim 7**, Baum further describes:

a step of providing time frames by segmenting a communication channel of said n subcarriers at every predetermined interval (fig. 4-6 & col. 9, lines 61-66, where the subcarrier frequency bands is time-divided into a baud durations (predetermined intervals);

a step of selecting a predetermined number of subcarriers from said n subcarriers, and inserting the common control channel signal continuously into the time frame of said selected subcarriers, and a step of selecting a predetermined number of subcarriers from said n subcarriers, and inserting the common pilot channel signal continuously into the time frame of said selected subcarriers (fig. 5, where broadcast synchronization (common control channel) signal using (and) common pilot code

(channel) signal are continuously inserted into (predetermined) subcarriers 502, 504, 506 & 508).

**Regarding claim 9**, Baum further describes that time frames are provided by segmenting a communication channel of said  $n$  subcarriers at every predetermined interval (fig. 4-6 & col. 9, lines 61-66, where the subcarrier frequency bands is time-divided into a baud durations (predetermined intervals);

said common control channel signal insertion means selects a predetermined number of subcarriers from said  $n$  subcarriers, and inserts the common control channel signal periodically into every time frame of said selected subcarriers (fig. 4 or 6, where broadcast synchronization (common control channel) signal are being periodically inserted to all or pre-selected (predetermined subset of)  $n$  subcarriers).

**Regarding claim 10**, Baum further describes that time frames are provided by segmenting a communication channel of said  $n$  subcarriers at every predetermined interval (fig. 4-6 & col. 9, lines 61-66, where the subcarrier frequency bands is time-divided into baud durations (predetermined intervals),

and said common control channel signal insertion means selects a predetermined number of subcarriers from said  $n$  subcarriers, and inserts the common control channel signal periodically into every time frame of said selected subcarriers (fig. 4 or 6, where broadcast synchronization (common control channel) signal are being inserted to all or pre-selected (predetermined subset of)  $n$  subcarriers);

**Regarding claims 11 and 15**, Baum further describes:

said common pilot signal insertion means selects a predetermined number of subcarriers from said  $n$  subcarriers and inserting the common pilot periodically into every time frame of said selected subcarriers (fig. 4 or 6, where broadcast synchronization (common control channel) signal are being inserted to all or pre-selected (predetermined subset of)  $n$  subcarriers), and

said common control channel signal insertion means and said common pilot signal insertion means insert the common control channel signal and the common pilot signal, respectively, into said selected subcarriers such that a timing of the insertion of either the common control channel signal or the common pilot signal, or both, are same as the timing of either the common control channel signal or the common pilot signal, or both, of other subcarriers (fig. 4 & 6, where the broadcast synchronization (common control channel signal) using (and) the selected (common) pilot code (channel) signal are periodically inserted at the same timeslot (timing) within the baud interval for every subcarrier).

**Regarding claim 17**, Baum further describes that time frames are provided by segmenting a communication channel of said  $n$  subcarriers at every predetermined interval (fig. 4-6 & col. 9, lines 61-66, where the subcarrier frequency bands is time-divided into baud durations (predetermined intervals);

said common pilot signal insertion means selects a predetermined number of subcarriers from said  $n$  subcarriers, and inserts the common pilot signal periodically into every time frame of said selected subcarriers (fig. 4 or 6, where pilot code (channel)

Art Unit: 2616

signal is being periodically inserted to all or pre-selected (predetermined subset of) n subcarriers).

***Allowable Subject Matter***

3. Claims 4-6, 12-14, 16 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

4. Applicant's arguments, filed April 21, 2006, with respect to claims 1-18 have been fully considered and are persuasive. The rejections to the final action of January 24, 2006 has been withdrawn for a new final action with new grounds of rejection.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Engstrom (US 5,909,436), Jeong (US 2002/0080887), Laroia (US 2004/0095904) and Li (US 2005/0220002).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Warner Wong whose telephone number is 571-272-8197. The examiner can normally be reached on 6:30AM - 3:00PM, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Warner Wong  
Examiner  
Art Unit 2616

WW



RICKY Q. NGO  
SUPERVISORY PATENT EXAMINER